M149-HDD122-001

HD CCTV
Digital Video Dome Camera

OPERATION MANUAL

Thank you for choosing our high quality camera. Before attempting to connect operate this unit, please read and follow these instructions.

CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Use Class 2 Power Supply Only

CONTENTS

1. CAUTIONS

2. IMPORTANT SAFETY INSTRUCTION

3. FEATURES

4. EQUIPMENT AND ACCESSORIES

5. CAMERA COMPONENT DESCRIPTIONS

6. INSTALLATION

7. DIMENSIONS

8. SPECIFICATION

9. OSD MANUAL
   - Menu structure
   - Function Description

1. CAUTIONS

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Caution

Any changes or modifications in construction of this devices which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

⚠ CAUTION

1. A regulated DC12V 1A power supply is recommended for use with this camera for the best picture and the most stable operation.
   An unregulated power supply can cause damage to the camera.
   When unregulated power supply is applied, product warranty will be out of subject.
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75Ω video impedance level.
   If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the Image Sensor.
5. **Do not remove the serial sticker for the warranty service.**
6. Do not expose the camera to rain or other types of liquid.
7. The apparatus must be connected to a mains socket-outlet with a protective earthing connection.

1. CAUTIONS

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.
Household users should contact either the retailer where they for disposal.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER.SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance

2. IMPORTANT SAFETY INSTRUCTION

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

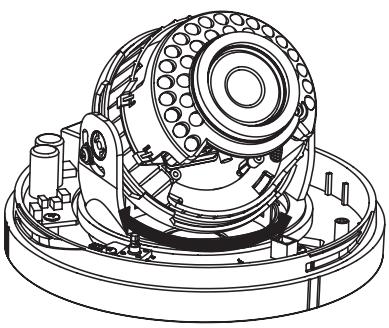
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

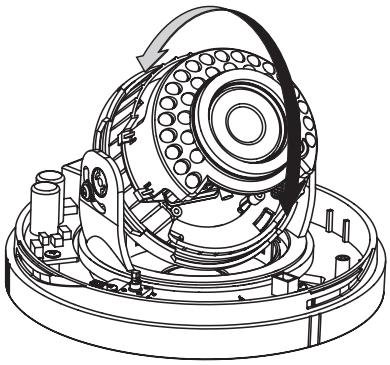
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

3. FEATURES

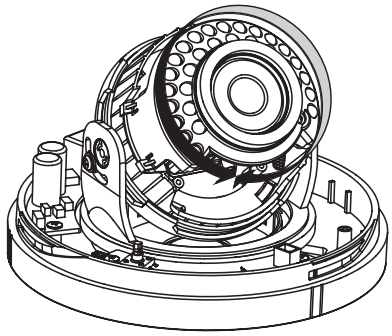
- **High Resolution**
  SONY 1 / 3” 2.1 M Progressive Color CMOS Image Sensor, 1920x1080 30fps
- **Support various digital video output**
  720p60, 720p50, 1080p30, 1080p25
- **Video Outputs**
  Primary HD-SDI (BNC)
  Test/Setup TV Out (Test Point-adapter to BNC included), NTSC/PAL selectable
- **OSD menu for setup and configuration**
- **Provides True Day / Night Capability with Motorized IR Cut Filter. (TDN Type Model Only)**
- **30 Long Life IR illuminations for 0 Lux viewing performance and range to 20m (65feet) (LED type model only)**
- **Lens Control**
  DC Iris / Board Lens
- **Power Source**
  DC 12V / AC24V (Dual Power Type)
  DC 12V (DC Power Type)
- **3-Acix Gimbal**



Pan Rotation

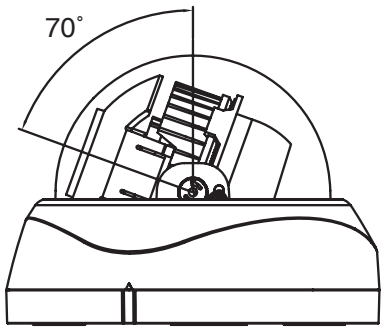


Tilt Rotation

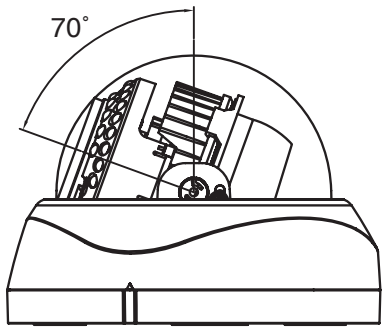


Horizontal Rotation

Tilting angle

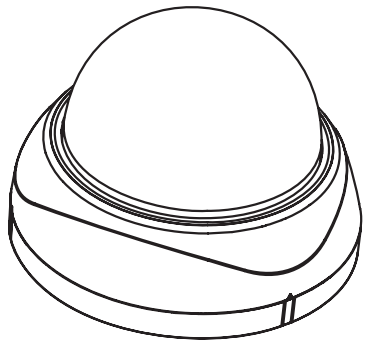
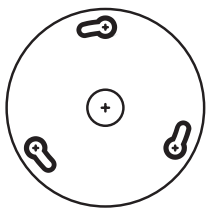
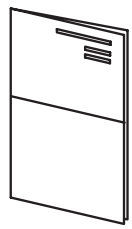
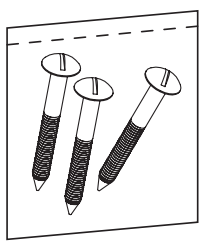
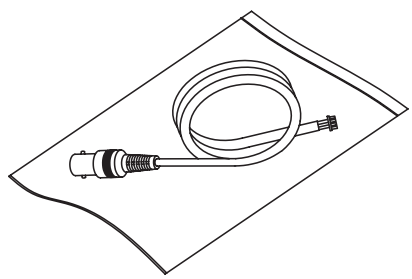


Standard Type



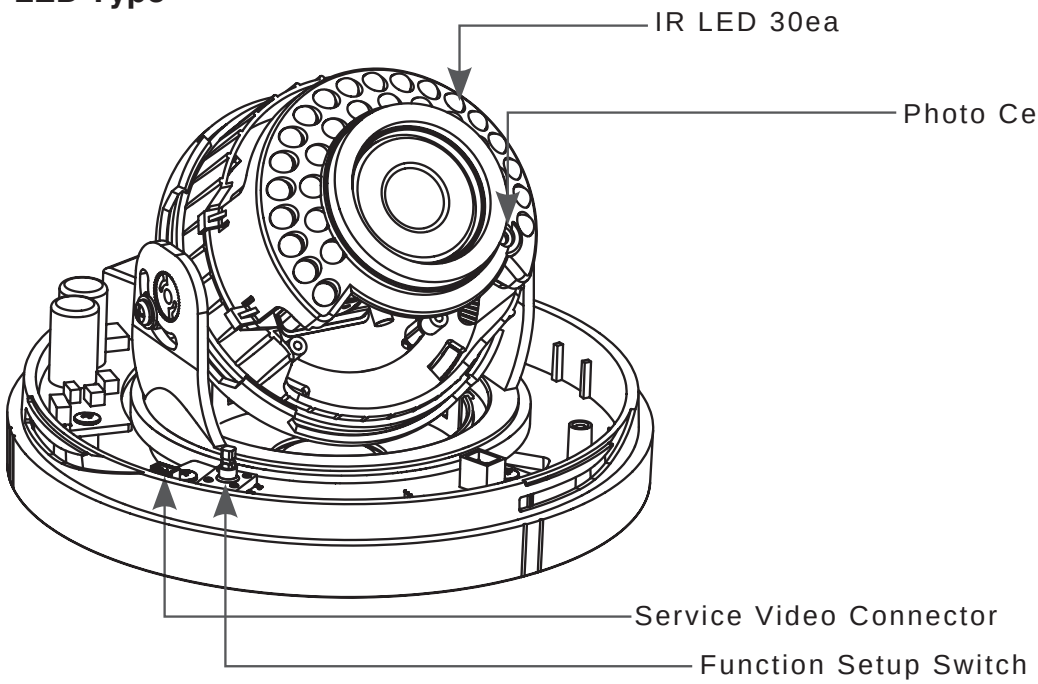
LED Type

4. EQUIPMENT AND ACCESSORIES

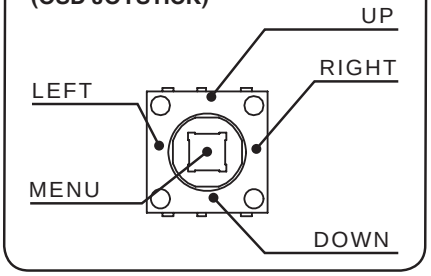
Camera	
	
Template	Manual
	
Screws	Service Video Output Test Cable
	

5. CAMERA COMPONENT DESCRIPTIONS

• LED Type

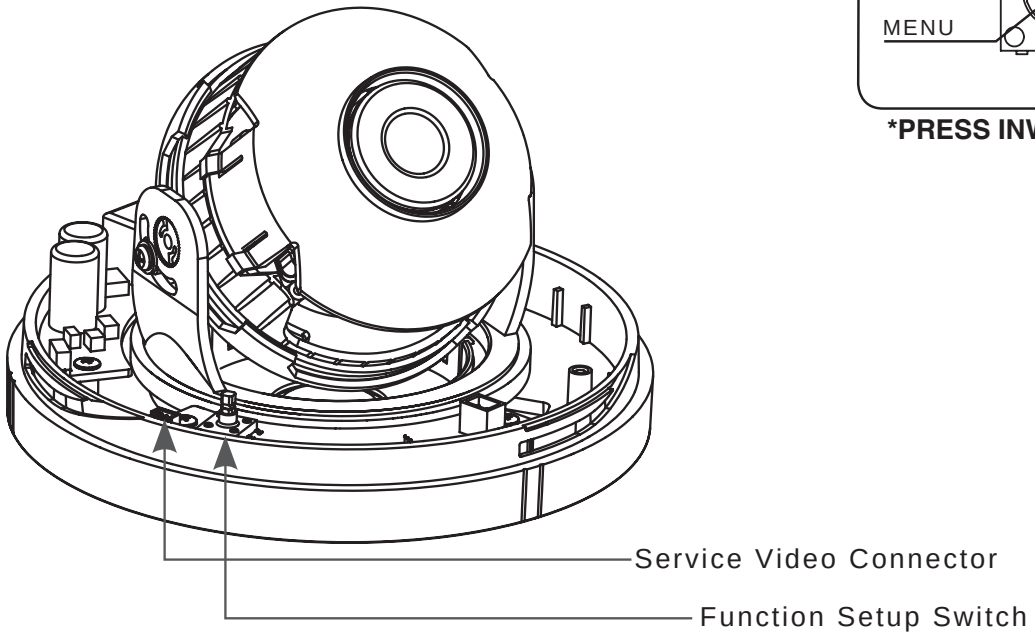


• CONTROL FUNCTION
(OSD JOYSTICK)

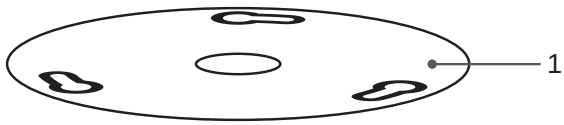


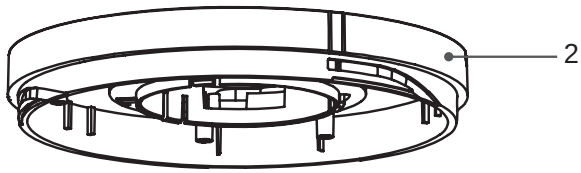
***PRESS INWARD FOR MENU**

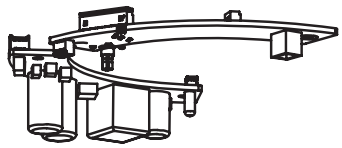
• Standard Type

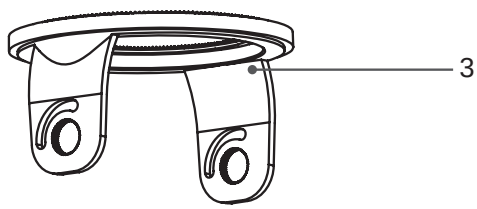


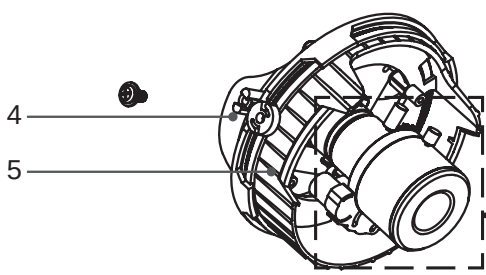
6. INSTALLATION

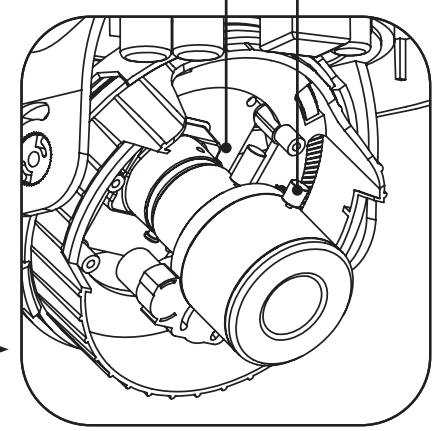




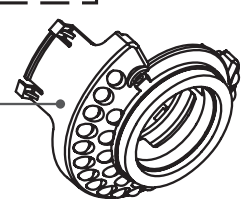


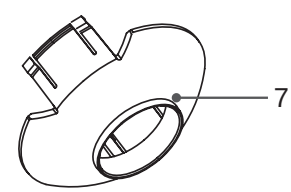


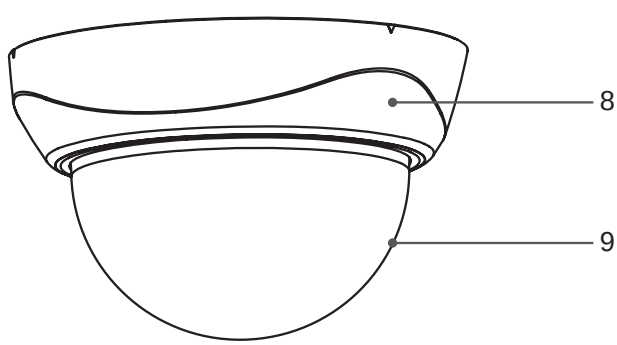




Separate LED Cover (Sunshield Cover) and adjust LENS ZOOM / FOCUS KNOB After setting the LENS, assemble the LED Cover (Sunshield Cover).





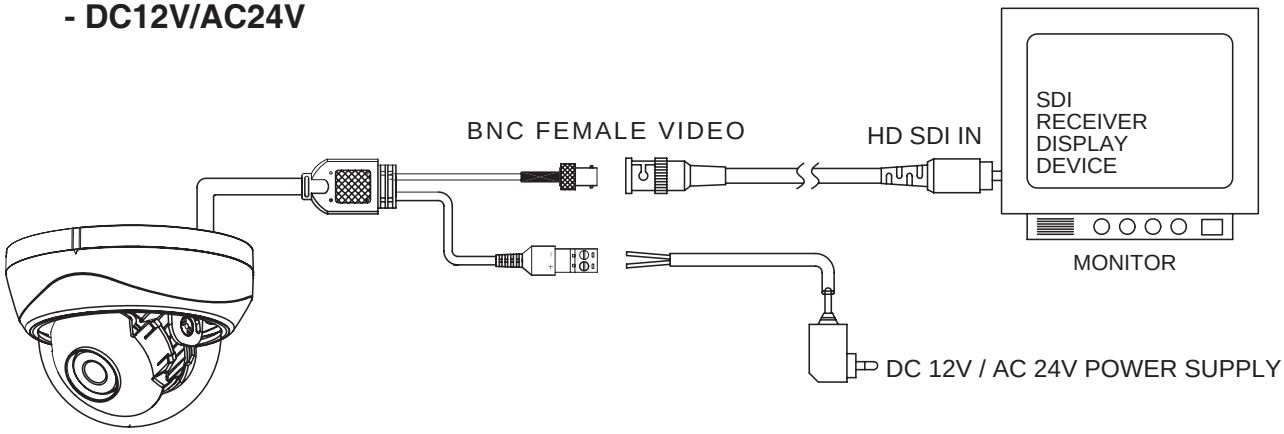


NO	PART NAME
1	Mount Guide
2	Housing Bottom
3	Holder Panning
4	Holder Tlit
5	Holder Rotate
6	Cover IR Led (LED Type)
7	Cover Sun Shield (Standard Type)
8	Housing Top
9	Dome Cover

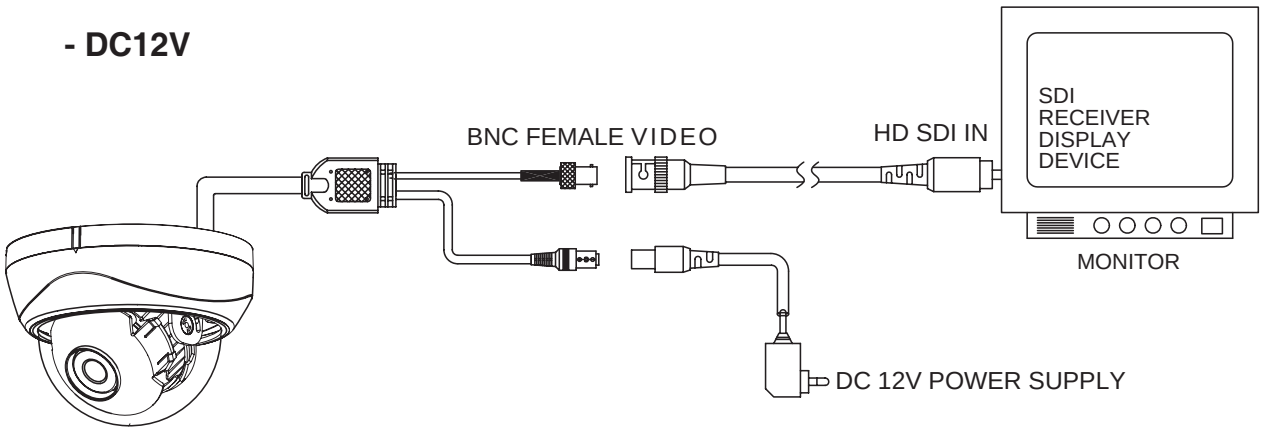
6. INSTALLATION

• MONITOR CONNECTION

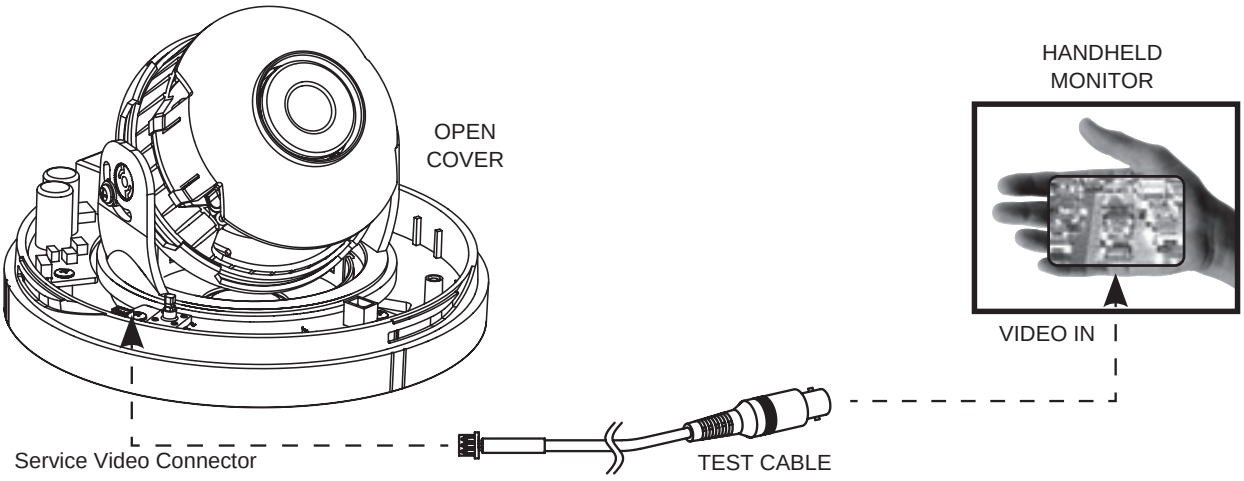
- DC12V/AC24V



- DC12V



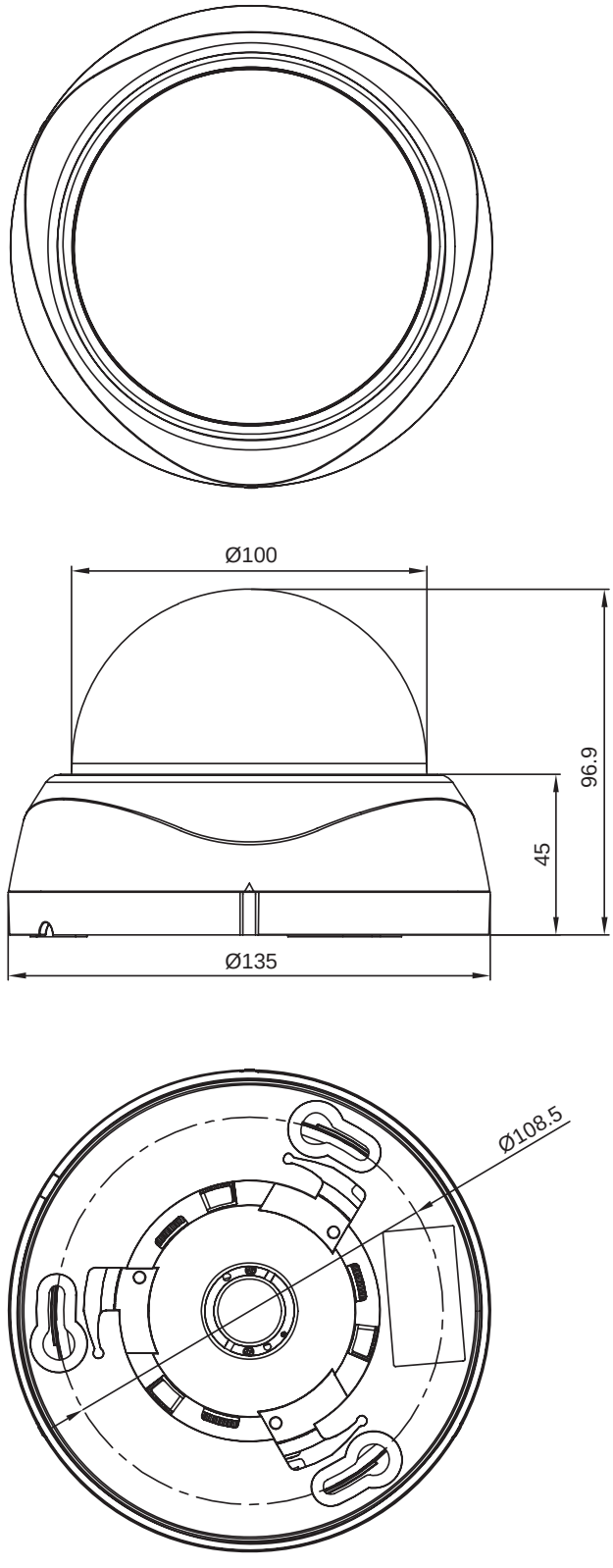
- Service Video connector



When you install the camera, please glue up the end of cable to keep it stable in order to protect the camera from the humidity problems.

7. DIMENSIONS

Unit(mm)



8. SPECIFICATION

Model		Standard Type	LED Type
Image Device		SONY 1/3” 2.1M Progressive Color CMOS Image Sensor	
Effective Pixels		1984 (H) x 1105 (V) 30fps	
Unit cell size		2.8um (H) x 2.8um (V)	
Video Output Mode		HD-SDI: 720p60, 720p50,1080p30, 1080p25 TV Out: NTSC / PAL selectable	
Minimum Illumination		0.1 Lux	0 Lux
S/N Ratio		More than 50dB	
Shutter Speed		Auto / Manual selectable	
Manual Shutter Speed		1/30(25), 1/60(50), 1/120(100), 1/240, 1/500, 1/1K, 1/2K, 1/4K, 1/8K, 1/16K, 1/30K, 1/60K	
True Day/Night		IR CUT	Pass Filter change
Controllable Max Gain		29 dB	
White Balance		AUTO / AUTOext / PUSH / MANUAL	
Lens Control		DC IRIS / Board Lens	
OSD Menu		Yes	
Power Consumption	DC	DC12V(±10%), Max. 180mA	DC12V(±10%), Max. 370mA
	Dual	DC12V(±10%), Max. 220mA AC24V(±10%), Max. 3.1W	DC12V(±10%), Max. 470mA AC24V(±10%), Max. 5.6W
IR LED		-	850nm, 30ea
IR Beam Range		-	Up to 20M (65 Feet)
Dimension		136.4(Φ) x 95.3(mm)	
Weight		343g	
Conformity		CE, FCC, KC	
Temperature / Humidity (no condensing)		Operation: 14°F~122°F(-10°C~+50°C / 20~80%) Storage: -4°F~158°F(-20°C~+70°C / 20~95%)	

Specifications and designs are subject to change for improving the functionality of this product without notice.

9. OSD MANUAL

• Menu structure

SETUP
EXPOSURE WHITE BALANCE WDR / BLC DNR DAY & NIGHT IMAGE SPECIAL SYSTEN RESET DATA ALL EXT

Main	Sub Menu	Sub Menu		
EXPOSURE	BRIGHTNESS	0 ~ 20		
	AE MODE (DC IRIS Only)	NORMAL AE / INDOOR		
	LENS (IRIS) (DC IRIS Only)	MANUAL / AUTO		
	SHUTTER	MANUAL / AUTO	LEVEL	1/30(25), 1/60(50), 1/120(100), 1/240, 1/500, 1/1K, 1/2K, 1/4K, 1/8K, 1/16K, 1/30K, 1/60K.
			RETURN	BACK / EXIT
	DSS	OFF, X2, X3, X4. X5, X6, X7, X8		
	AGC	0 ~ 10		
	BASE FREQ	60Hz / 50Hz		
	RESET DATA	BACK / DEF.		
	RETURN	BACK / EXIT.		
WHITE BALANCE	WB MODE	AUTO /AUTOext /PUSH /MANUAL	COLORTEMP.	LOW / MIDDLE / HIGH
			R-GAIN	0 ~ 20
			B-GAIN	0 ~ 20
			RETURN	BACK / EXIT
	SATURATION	0 ~ 20		
	RESET DATA	BACK / DEF.		
	RETURN	BACK / EXIT.		
WDR / BLC	MODE	OFF/ WDR/ BLC/ D-WDR		
	WDR WGT	0 ~ 4		
	BLC OSD	OFF, ON		
	BLC POS-X	0 ~ 20		
	BLC POS-Y	0 ~ 20		
	BLC SIZE-X	0 ~ 20		
	BLC SIZE-Y	0 ~ 20		
	RESET DATA	BACK / DEF.		
	RETURN	BACK / EXIT.		
DNR		OFF / LOW / MIDDLE / HIGH		

9. OSD MANUAL

Main	Sub Menu	Sub Menu		
DAY & NIGHT		COLOR / B&W / AUTO	D&N DETECT	AGC / SENSE (LED Type Only)
			DELAY	1sec, 3, 5, 10, 15, 20, 25, 30, 40, 50, 60sec
			D->N LEVEL	0 ~ 20(AGC) / 0 ~10(SENSE)
			N->D LEVEL	0 ~ 20(AGC) / 0 ~10(SENSE)
			RESET DATA	BACK / DEF.
			RETURN	BACK / EXIT.
IMAGE	SHARPNESS	0 ~ 20		
	GAMMA	0 ~ 4		
	FLIP	OFF, H FLIP, V FLIP, HV FLIP		
	LENS SHADING	OFF, ON		
	DZOOM	1x, 2x, 4x, 6x, 8x, 10x, 12x, 14x, 16x, 18x, 20x		
	RESET DATA	BACK / DEF.		
	RETURN	BACK / EXIT.		
SPECIAL	PRIVACY	OFF/ ON	ZONE NO.	0 ~ 23
			ZONE OP.	OFF/ ON
			X-POS	0 ~ 60
			Y-POS	0 ~ 40
			X-SIZ	0 ~ 40
			Y-SIZ	0 ~ 40
			COLOR	BLK, WHI, YEL, CYN, GRN, MAG, RED, BLU
			TRANS.	0 ~ 4
			RESET DATA	BACK / DEF.
			RETURN	BACK / EXIT.
	HLMASK	OFF/ ON	LEVEL	0 ~ 20
			COLOR	BLK, WHI, YEL, CYN, GRN, MAG, RED, BLU
			RESET DATA	BACK / DEF.
			RETURN	BACK / EXIT.
	PATTERN	OFF / 0 / 1		
	RESET DATA	BACK / DEF.		
	RETURN	BACK / EXIT.		
SYSTEM	SDI FORMAT	1080P / 720P		
	SDI FPS	30(60) / 25(50)		
	CVBS FORMAT	NTSC / PAL	CVBS OUT	AUTO / OFF / ON(WDR OFF)
			CVBS VIEW	CROP / FULL
			RETURN	BACK / EXIT.
	SYSTEM INFO.		S/W VERSION	
			SET VERSION	
			RETURN	BACK / EXIT.
	REBOOT			
	RETURN	BACK / EXIT.		

9. OSD MANUAL

• Function Description

0. SETUP

- EXPOSURE : Go sub menu for camera exposure control.
- WHITE BALANCE : Go sub menu for camera white balance control.
- WDR/BLC : Go sub menu for camera WDR or BLC action.
- DNR : Control noise reduction setting.
- DAY & NIGHT : Go sub menu for camera day & night control.
- IMAGE : Go sub menu for adjust image functions.
- SPECIAL : Go sub menu for special feature control.
- SYSTEM : Go sub menu for system control & information.
- RESET DATA ALL : Reset camera's all feature data to default value.

1. EXPOSURE

- BRIGHTNESS : Adjust image brightness value.
- AE MODE : Adjust AE control mode. (DC Iris Model Only)
- LENS(IRIS) : Select lens iris control type. (DC Iris Model Only)
- SHUTTER : Select shutter speed control type.
  - LEVEL : Adjust shutter speed at manual shutter mode.
- DSS : Adjust digital slow shutter control level.
- AGC : Adjust max gain level for brightness control.
- BASE FREQ : Select basic control frequency for control camera feature.

2. WHITE BALANCE

- WB MODE : Select white balance control mode.
  - AUTO : Full auto control mode in color temperature rage 2300K~10000K.
  - AUTOext : Extended auto mode for special illumination.
  - PUSH : Enable fix the control setting for specific environment. Push & release, for fix WB control setting.
  - MANUAL : Enable WB control setting by user's intention.
    - COLOR TEMP. : Select color temperature range for WB control at manual mode
    - R-GAIN : Adjust red color gain for WB control at maual mode.
    - B-GAIN : Adjust blue color gain for WB control at manual mode.
- SATURATION : Adjust color saturation level.

9. OSD MANUAL

3. WDR/BLC

- MODE : Select WDR / BLC mode.
  - • WDR : Act in wdie dynamic rage mode. Controled video frame rate in 1/2.
  - • BLC : Act in Backlight compensation mode.
  - • D-WDR : Digital wide dynamic range control.
- WDR WGT : WDR weight control level settig at WDR mode.
- BLC OSD : Display BLC control zone in screen.
- BLC POS-X : Select BLC control zone vertical position.
- BLC POS-Y : Select BLC control zone horizontal position.
- BLC SIZ-X : Select BLC control zone vertical size.
- BLC SIZ-Y : Select BLC control zone horizontal size.

4. DNR : Reduce image's noise

5. DAY & NIGHT

- MODE : Select TDN(True Day & Night control) mode.
  - • AUTO : Camera controlled automatically to decide day or night environment using AGC calculation data.
  - • COLOR : Fix to mode at day environment setting. Make video image act in color.
  - • B&W : Fix to mode at night environment setting. Make video image act in B/W and IR filter change.
- ■ D/N DETECT : Select AGC or CDS control for TDN auto control.
- ■ DELAY : Delay time for change day or night mode at auto mode.
- ■ D->N LEVEL : Threshold level for change Day to Night mode.
- ■ N->D LEVEL : Threshold level for change Night to Day mode.

6. IMAGE

- SHARPNESS : Adjust image sharpness level.
- GAMMA : Gamma Curve Select.
- FLIP : Vertical & Horizontal flip setting.
- LENS SHADING : Enable lens shading compensation.
- DZOOM : Select digital zoom magnification.

7. SPECIAL

- PRIVACY : Setting for protect private area in image using mask setting.
  - • ZONE NO. : Select private mask zone number.
  - • ZONE OP. : Select zone mask display on/off.
  - • X-POS : Select zone horizontal position.
  - • Y-POS : Select zone vertical position.
  - • X-SIZ : Select zone horizontal size.
  - • Y-SIZ : Select zone vertical size.
  - • COLOR : Select mask color.
  - • TRANS. : Select mask transparency level.

- HLMASK : Mask image high light area.
  - LEVEL : Select high light level.
  - COLOR : Select mask color.
- PATTERN : Color bar display Select.

8. SYSTEM

- SDI FORMAT : 1080P / 720P.
- SDI FPS : 30 or 25 fps in 1080p mode. 60 or 50 fps in 720p mode.
- CVBS FORMAT : NTSC / PAL.
  - CVBS OUT : Select mode for CVBS out action.
    - ON, OFF : Enable or Disable CVBS out data.
    - AUTO : Check automatically CVBS video cable connection. If connected, CVBS out data is enable and WDR mode is setted off automatically.
  - CVBS VIEW : CVBS out video angle setting.
    - CROP : Cut the scene outside area for keep image aspect ratio.
    - FULL : Fill the full angle scene into image with H-V size & ratio change.
- SYSTEM INFO.
  - S/W VERSION : Camera's basic software version.
  - SET VERSION : Camera's feature control setting version.